

CLAIMS

1. An electron tube (1) comprising:

an envelope (2) formed with a photocathode (11) at a predetermined part of an internal surface thereof;

5 an insulating tube (9) having one end and another end, the another end being connected to the envelope (2) and the one end protruding inside the envelope (2);

an electron-bombarded semiconductor device (15) provided on the one end of the tube (9);

10 an alkali source (27) provided inside the envelope (2) to generate alkali metal vapor; and

a separating member (21', 23', 26) disposed between the alkali source (27) and the tube (9),

15 wherein the semiconductor device (15) detects photoelectrons emitted from the photocathode (11) in response to an incident light thereon.

2. The electron tube (1) as claimed in Claim 1, further comprising:

20 an inner stem (80) connected to the one end of the tube (9) via a conductive member (89); and

a conductive member (21) provided on the one end of the tube (9) and protruding outside the tube (9) to reduce the field intensity in the vicinity of the one end of the tube (9),

25 wherein the semiconductor device (15) is disposed on

the inner stem (80).

3. The electron tube (1) as claimed in Claim 1, further comprising a conductive member (23) provided on the another end of the tube (9) and protruding outside the tube (9) to reduce the field intensity in the vicinity of the another end of the tube (9),

wherein the envelope (2) further comprises an outer stem (6) connected to the another end of the tube (9), at least a part of the outer stem (9) that is connected to the another end of the tube (9) being conductive.

4. The electron tube (1) as claimed in any one of Claims 1 to 3,

wherein the envelope (2) is applied with a ground potential, and

wherein the semiconductor device (15) is applied with a positive potential.

5. The electron tube (110) according to claim 1,

wherein the separating member (21', 23', 26) is either a conductive member (21') provided on the one end of the tube (9) and protruding outside the tube (9) to reduce the field intensity in the vicinity of the one end of the tube (9) or a conductive member (23') provided on the another end of the tube (9) and protruding outside the tube (9) to reduce the field intensity in the vicinity of the another end of the tube (9).

6. The electron tube (110) as claimed in Claim 1,

wherein the separating member (21', 23', 26) includes
a conductive member (21') provided on the one end of the
tube (9) and protruding outside the tube (9) to reduce the
5 field intensity in the vicinity of the one end of the tube
(9) and a conductive member (23') provided on the another
end of the tube (9) and protruding outside the tube (9) to
reduce the field intensity in the vicinity of the another
end of the tube (9).

10 7. The electron tube (110) as claimed in Claim 6,

wherein the conductive member (21') and conductive
member (23') are partially overlapped with each other in the
axial direction of the tube (9).

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